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A NEW OCELLATE SPECIES OF *MATELEA* (APOCYNACEAE, ASCLEPIADOIDEAE) FROM MESOAMERICA

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ABSTRACT

Matelea corniculata W.D. Stevens & Arbeláez, **sp. nov.** (Apocynaceae, Asclepiadoideae, Gonolobinae), from the Caribbean forest of Costa Rica and Nicaragua is described. It is a member of a loose assemblage of small-flowered species held together primarily by having a bright white, reflective ocellus at the tip of each corolla lobe. A description, diagnosis, and illustration are provided.

Matelea Aubl., as circumscribed by Woodson (1941), probably comprises 200 to 300 species of the American tropics and subtropics and has been the catch-all genus of the group now known as the Gonolobinae. Efforts to tease phylogenetically meaningful genera from Woodson's "Matelea" have proceeded slowly, but several segregate genera have achieved some currency. *Matelea* in the strictest sense comprises a dozen or two species in the Amazon basin (Farinaccio & Stevens 2009).

The "ocellate complex" (Krings 2012) of *Matelea* is a loose assemblage of small-flowered species held together primarily by having a bright white, reflective ocellus at the tip of each corolla lobe. There are five species of this complex in the Caribbean (Krings 2011), one in Venezuela (Krings 2012), and with this new species five in Mesoamerica. Although there is a great deal of variation in the floral morphology within these eleven species, the three species with known fruits, all Caribbean, have peculiar, narrow, 5-ridged follicles that match nicely the follicles of the type elements of *Matelea*. The phylogeny of the Gonolobinae is far from being resolved and seems to become less rather than more clear as molecular data accumulates, but it is easy to imagine that a circumscription of *Matelea* only slightly expanded from the type elements could include this "ocellate complex."

MATELEA CORNICULATA W.D. Stevens & Arbeláez, **sp. nov. TYPE: COSTA RICA. Heredia.** Finca La Selva, Puerto Viejo de Sarapiquí, Sábalo-Esquina Trail, 2000 Line, first growth, creek bank, 7 Jul 1979, *J. Sperry 840* (holotype: DUKE; isotype: MO). Figure 1 A-D.

This new species is most similar to *Matelea emmartinezii* W.D. Stevens but differs conspicuously in having a strongly convex (not more or less plane) style apex, a well differentiated, 5-lobed outer corona (rather than a simple pentagonal disk), and corolla lobes that are longer, plane and with prominent horns between the corona lobes (rather than shorter, cucullate and lacking horns).

Woody twining vine with thick, tan-colored, fissured cork, latex unknown. **Stems** with a mixed indumentum in 2 rows, long trichomes reflexed, 0.3–0.6 mm, pale brown, tips straight, capitate-glandular trichomes ca. 0.05 mm, brown, internodes 2–10 cm. **Leaves** opposite, blades ovate to elliptic, 4.5–11.0 x 1.5–6.5 cm, apex acuminate to long-acuminate, base rounded or shallowly cordate, adaxially smooth, glabrous or with a few glandular trichomes at the base of the midrib, abaxially pusticulate, glabrous except with sparse glandular trichomes on veins, lateral veins 4 to 5 pairs, curved, middle veins 30°–45° to midrib, colleters 2; petioles 0.4–1.2 cm, with dense glandular

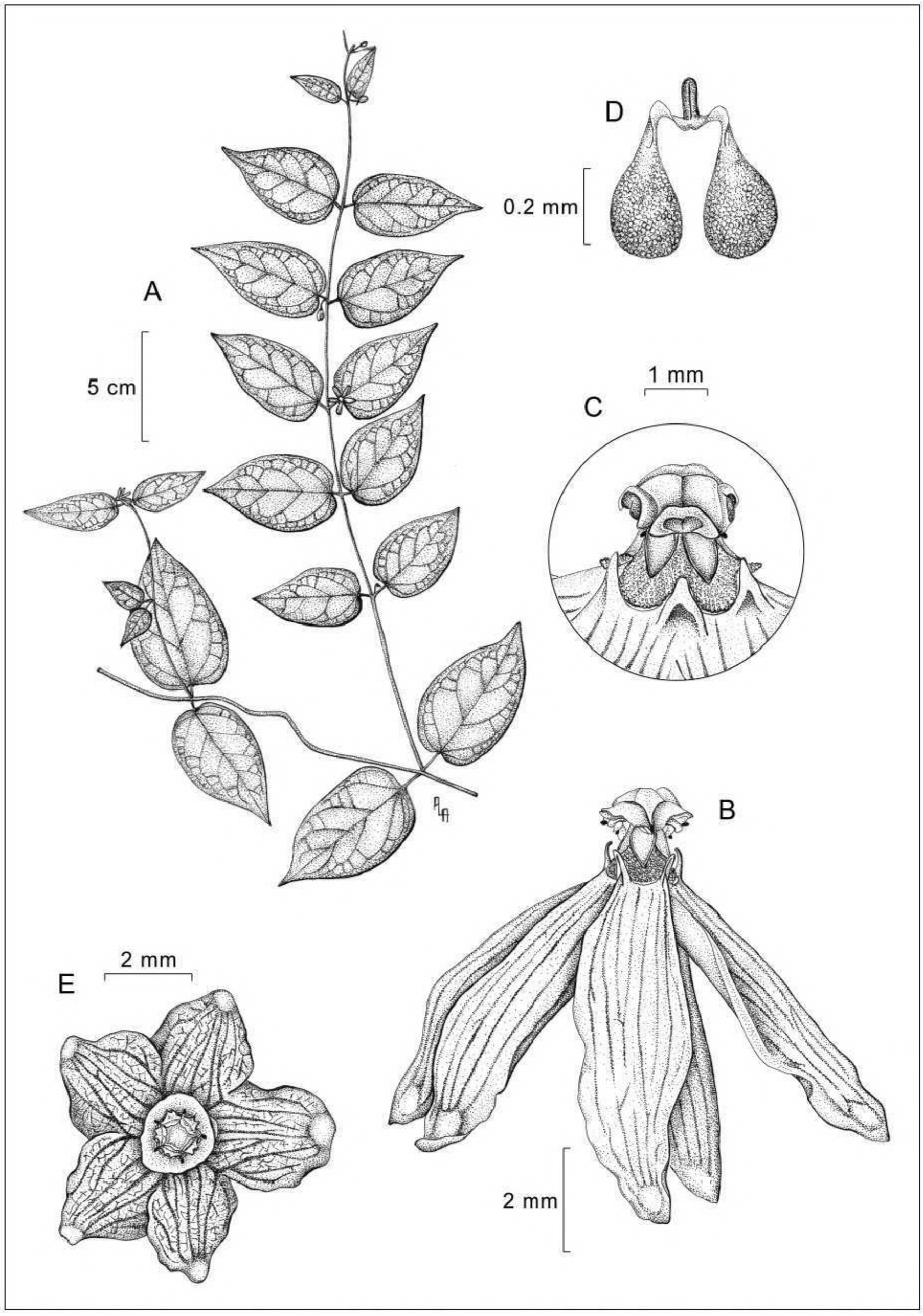

Figure 1. A-D. *Matelea corniculata*. A. Habit. B. Flower. C. Gynostegium. D. Polinarium. E. *Matelea pusilliflora* L.O. Williams. Flower. (A, C-D are illustrated from *Sperry 840*; B is illustrated from *Suazo 238*; E is illustrated from *Contreras 299*, MO).

trichomes. **Inflorescences** racemiform, with dense glandular trichomes, 2- to 4-flowered, peduncle 2–3 mm, bracts linear, 0.5–3 x 0.1–0.5 mm, pedicels 3–5 mm; calyx lobes ovate, 2.1–3.2 x 0.8–1.5 mm, reflexed, glabrous, with 1 colleter within each sinus; corolla apparently brown, reticulate, with a bright white spot at the tip of each lobe, glabrous except with sparse glandular trichomes outside, tube ca. 0.5 mm long, with a horn between each lobe of the corona, this horn erect or slightly curved inward, 0.3–0.4 mm tall, corolla lobes reflexed, elliptic, flat, 6.5–9.2 x 2.5–3.2 mm; gynostegium with a cylindrical stipe 1–1.2 mm tall; corona covering stipe, lobes opposite the anthers, each with a broad, vertically striate, densely papillate margin; anthers generally trapezoidal, terminal appendages conspicuous, appressed to style apex, white, corpusculum sagittate, red-brown, ca. 0.2 x 0.08 mm, translator ca. 0.2 mm, pollinium more or less horizontal, ca. 0.5 x 0.3 mm, obovate, sterile and excavated at base; style apex star-shaped when flattened but strongly convex and nearly circular in outline, in natural form 2–2.1 mm wide. **Follicles and seeds** unknown.

Paratype. **NICARAGUA. Río San Juan.** Mpio. El Castillo: El Guayabo, 11° 1' N, 84° 23' W, 50 m, 7 Jul 2008, *N. Suazo 238* (HULE, MO).

Distribution and ecology. *Matelea corniculata* is known from two collections, the first from La Selva Biological Station (Heredia, Costa Rica) in 1979 and the second in more or less adjacent Río San Juan, Nicaragua, in 2008, in lowland tropical rainforest. Both collections were flowering in July, in the rainy season. La Selva Biological Station is well protected, but on the other hand it is one of the most intensely studied plots on the earth and the species does not seem to have been recollected in the intervening 35 years. The Nicaraguan collection is more recent, and although the collection locality is now completely deforested, it is adjacent to the relatively well protected Indio-Maiz Biological Reserve and surviving populations may exist. If IUCN standards (IUCN 2001) were applied, this new species would probably fall in the Data Deficient (DD) category.

Our lack of a clear understanding of generic limits of the Gonolobinae is most often blamed on the bizarre floral diversity. Another factor that must be considered is the rarity of many of the species. The five species of ocellate *Matelea* in Mesoamerica are known to us by a total of 18 collections, none with fruits. The single South American species is known by one collection, without fruits, and the five Caribbean species by 34 collections (from Krings, 2011, 2012), with at least immature fruits described for three of the species. The Nicaraguan paratype of *Matelea corniculata* (2008) is the first collection of an ocellate *Matelea* from Mesoamerica since 1997. Too many species are just too poorly known and likely to become extinct before they are thoroughly described or perhaps even before they are named.

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